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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicant:** Jonathan Miller, et al.

**Docket:** 13993

**Serial No.:** 09/730,214

**Group Art Unit:** Unassigned

**Filed:** December 5, 2000

**Dated:** January 12, 2001

**For:** METHOD AND SYSTEM FOR DESIGNING  
PROTEINS AND PROTEIN BACKBONE  
CONFIGURATIONS

Assistant Commissioner for Patents  
Washington, D.C. 20231

**INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with 37 C.F.R. §§ 1.97 and 1.98, it is requested that the following references, which are also listed on the attached Form PTO-1449, be made of record in the above-identified case.

1. Beasley, J.R. et al., "Protein Design: The Choice of De Novo Sequences\*", *The Journal of Biological Chemistry*, Vol. 272, No. 4, January 1997, p. 2031-2034;
2. Baltzer, L., "Functionalization of Designed Folded Polypeptides", *Current Opinion in Structural Biology*, Vol.8, p. 466-470;

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**CERTIFICATE OF MAILING UNDER 37 C.F.R. ' 1.8(a)**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231 on January 12, 2001.

Dated: January 12, 2001

  
Michelle Mustafa

3. Cao, A.N. et al., *Prog. Biochem. Biophys.*, Vol 25, 1998, p. 197-201 (Japanese language);
4. Giver, L. et al., "Combinatorial Protein Design by *in vitro* Recombination", *Current Opinion in Chemical Biology*, Vol.2, 1998, p.335-338;
5. Regan, L. et al., "Engineering and Design Recent Adventures in Molecular Design", *Current Opinion in Structural Biology*, Vol.8, 1998, p.441-442;
6. Schafmeister, C.E. et al., "Helical Protein Design", *Current Opinion in Biotechnology*, Vol. 9, 1998, p. 350-353;
7. Shakhnovich, E.I., "Protein Design: A Perspective from Simple Tractable Models", *Folding & Design*, Vol.3, No.3, June 1998, p. R45-R58;
8. DeGrado, W.F. et al., "De Novo Design and Structural Characterization of Proteins and Metalloproteins", *Annu. Rev. Biochem.*, Vol. 68, 1999, p. 779-819;
9. Harbury, P.B. et al., "high-Resolution Protein Design with Backbone Freedom", *Science*, Vol. 282, November 1998, p.1462-1467;
10. Struthers, M.D. et al., "Design of a Monomeric 23-Residue Polypeptide with Defined Tertiary Structure", *Science*, Vol. 271, January 1996, p.342-345;
11. Dahiyat, B.I. et al., "De Novo Protein Design: Fully Automated Sequence Selection", *Science*, Vol. 278, October 1997, p. 82-87;
12. Dahiyat, B.I. et al., "De Novo Protein Design: Towards Fully Automated Sequence Selection", *Journal of Molecular Biology*, Vol. 273, 1997, 789-796;
13. Chothia, C., "One Thousand Families for the Molecular Biologist", *Nature*, Vol. 357, June 1992, p. 543-544;
14. Li, H. et al., "Emergence of Preferred Structures in a Simple Model of Protein Folding", *Science*, Vol. 273, August 1996, p. 666-669;
15. Li, H. et al., "Are Protein Folds Atypical?", *Proc. Natl. Acad. Sci.*, Vol. 95, April 1998, p. 4987-4990;

16. Govindarajan, S. et al., "Searching for Foldable Protein Structures Using Optimized Energy Functions", *Biopolymers*, Vol. 36, 1995, p. 43-51;
17. Finkelstein, A.V. et al., "Why Do Globular Proteins Fit the Limited Set of Folding Patterns?", *Prog. Biophys. Molec. Biol.*, Vol. 50, 1987, p. 171-190;
18. Yue, K. et al., "Forces of Tertiary Structural Organization in Globular Proteins", *Proc. Natl. Acad. Sci.*, Vol. 92, January 1995, p. 146-150;
19. Melin, R. et al., "Designability, Thermodynamic Stability, and Dynamics in Protein Folding: A Lattice Model Study", *Journal of Chemical Physics*, Vol. 110, No. 2, January 1999, p. 1252-1262;
20. Bryngelson, J.D. et al., "Spin Glasses and the Statistical Mechanics of Protein Folding", *Proc. Natl. Acad. Sci.*, Vol. 84, November 1987, p. 7524-7528;
21. Park, B.H. et al., "The Complexity and Accuracy of Discrete State Models of Protein Structure", *Journal of Molecular Biology*, Vol. 249, 1995, p. 493-507;
22. Flower, D.R., "SERF: A Program for Accessible Surface Area Calculations", *Journal of Molecular Graphics and Modelling*, Vol. 15, 1997, p. 238-244;
23. Creighton, T.E., "PROTEINS Structures and Molecular Properties", Freeman, New York, ed. 2, 1997, p. 236-237;
24. Dill, K.A., "Theory for the Folding and Stability of Globular Proteins", *Biochemistry*, Vol. 24, 1985, p. 1501-1509;
25. Lau, K.F. et al., "A Lattice Statistical Mechanics Model of the Conformational and Sequence Spaces of Proteins", *Macromolecules*, Vol. 22, 1989, p. 3986-3997;
26. Fezoui, Y. et al., "Solution Structure of  $\alpha\alpha$ , a Helical hairpin Peptide of De Novo Design", *Protein Science*, Vol. 6, 1997, p. 1869-1877;
27. Kuroda, Y. et al., "Solution Structure of a De Novo Helical Protein by 2D-NMR Spectroscopy", *Journal of Molecular Biology*, Vol. 236, 1994, p. 862-868;

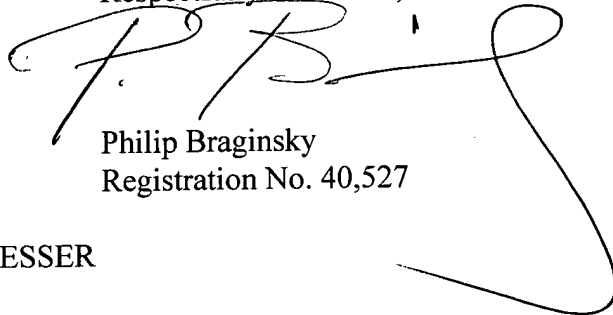
28. Brown, B.M. et al., "Tolerance of Arc Repressor to Multiple-Alanine Substitutions", *Proc. Natl. Acad. Sci.*, Vol. 96, March 1999, p. 1983-1988;

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Applicant is submitting copies of the above-cited references.

Inasmuch as this Information Disclosure Statement is being submitted in accordance with the schedule set out in 37 C.F.R§1.97(b), no petition, certification or fee is required. Consideration of this Information Disclosure Statement is respectfully requested.

Respectfully submitted,

A large, stylized handwritten signature in black ink, appearing to be 'P. Braginsky', is written over the typed name and registration number.

Philip Braginsky  
Registration No. 40,527

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PB:dra

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**  
(Under 37 CFR 1.97(b) or 1.97(c))

Docket No.  
13993

In Re Application Of: Jonathan Miller, et al.

Serial No.  
09/730,214

Filing Date  
December 5, 2000

Examiner  
Unassigned

Group Art Unit  
Unassigned

Title: **METHOD AND SYSTEM FOR DESIGNING PROTEINS AND PROTEIN BACKBONE CONFIGURATIONS**

Address to:  
Assistant Commissioner for Patents  
Washington, D.C. 20231

**37 CFR 1.97(b)**

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application; within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; or before the mailing date of a first Office Action on the merits, whichever event occurs last.

**37 CFR 1.97(c)**

2. ☐ The Information Disclosure Statement submitted herewith is being filed after three months of the filing of a national application, or the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; or after the mailing date of a first Office Action on the merits, whichever occurred last but before the mailing date of either:

1. a Final Action under 37 CFR 1.113, or
  2. a Notice of Allowance under 37 CFR 1.311,
- whichever occurs first.

Also submitted herewith is:

- ☐ a certification as specified in 37 CFR 1.97(e);

**OR**

- ☐ the fee set forth in 37 CFR 1.17(p) for submission of an Information Disclosure Statement under 37 CFR 1.97(c).

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**  
(Under 37 CFR 1.97(b) or 1.97(c))

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December 5, 2000

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Title: **METHOD AND SYSTEM FOR DESIGNING PROTEINS AND PROTEIN BACKBONE CONFIGURATIONS**

**Payment of Fee**

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

- ☐ A check in the amount of \_\_\_\_\_ is attached.
- ☒ The Assistant Commissioner is hereby authorized to charge and credit Deposit Account No. 19-1013/SSMP as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of \_\_\_\_\_
- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

**Certificate of Transmission by Facsimile\***

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**Certificate of Mailing by First Class Mail**

I certify that this document and fee is being deposited on **January 12, 2001** with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Signature of Person Mailing Correspondence

**Michelle Mustafa**

Typed or Printed Name of Person Mailing Correspondence

**\*This certificate may only be used if paying by deposit account.**

Signature

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Dated: **January 12, 2001**

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